



## Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at <http://about.jstor.org/participate-jstor/individuals/early-journal-content>.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact [support@jstor.org](mailto:support@jstor.org).

THE ORIGINS OF CIVILIZATION<sup>1</sup>

By Professor JAMES HENRY BREASTED

THE UNIVERSITY OF CHICAGO

## FROM THE OLD STONE AGE TO THE DAWN OF CIVILIZATION. III

SUCH forces gradually brought about the union of two states on the Nile: in the *north* a kingdom of the delta commonly known as Lower Egypt; and in the *south* a kingdom of the valley above the delta, which we usually call Upper Egypt. The kingdom of Upper Egypt was evidently the older. Side by side the two existed for centuries, each gaining its own traditions, symbols and insignia which survived in historic times for thousands of years. In early dynastic reliefs like Fig. 41, we see

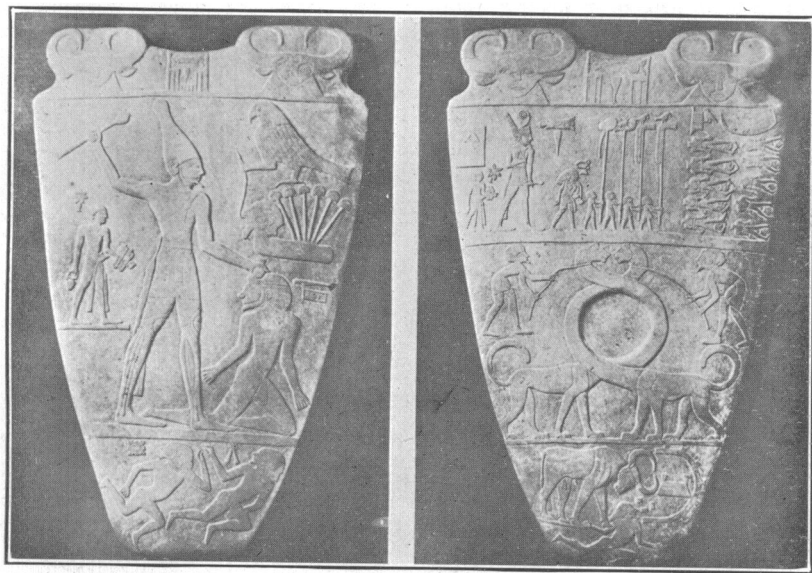


FIG. 41. TRIUMPH OF A PHAROAH AT THE BEGINNING OF THE DYNASTIC AGE. On the right, the king wears the white crown of Upper Egypt; on the left (top scene, left end) he wears the spiral-crowned diadem of Lower Egypt. Relief scenes on a magnificent ceremonial palette of slate. (From Quibell, "Hierakonpolis.")

the tall white crown worn by the prehistoric kings of Upper Egypt, and also the curious spiral-crowned red diadem which regularly distinguished the King of Lower Egypt. In a prehistoric struggle which must have gone on for generations, the king of Upper Egypt, he of the tall white crown, conquered his

northern rival of Lower Egypt, him of the curious red crown, and united Egypt under one sovereignty. Thus probably not more than a century after the middle of the fourth millennium B.C., emerged the first great state in history. In commemoration of his double sovereignty over the two prehistoric kingdoms, the Pharaoh, as we may begin to call him, assumed and wore the crowns of both states, as we see this king here doing on two different occasions. It is interesting to find him still wearing the symbol of his hunting ancestry—the tail of a wild animal appended to his girdle behind.

Such monuments as these show us how the prehistoric Egyptian system of picture signs was developing into phonetic writing. The victory of this king over the enemy symbolized by this single adversary whom he is shown dispatching (Fig. 41, right-hand relief), is commemorated in an archaic pictographic group over the head of the captive. The falcon (here with a human arm) is an enormously old symbol of the prehistoric ruler of upper Egypt. Knowing this, we easily read the group; for it will be noticed that the falcon grasps a rope by which he leads a captive suggested by a human head with the rope fastened to the mouth. This head rises out of a stretch of level ground out of which are growing six lotus leaves on tall stems each the symbol for 1000. Just below is a single barbed harpoon, and a small rectangle filled with wavy lines of water, meaning a pool or lake. The meaning of the whole is clear: "The Falcon King has led captive 6,000 men of the Land of the Harpoon Lake." The further process by which these purely picture signs became phonetic, furnishing the earliest known system of phonetic writing, is now fairly clear to us, but space will not permit its discussion here. It should be mentioned, however, that before 3000 B.C. this system of Egyptian writing developed a complete series of consonantal alphabetic signs, and there is now no reason to doubt that the Phœnician alphabet, and hence likewise our own, have descended from the picture writing of Egypt which we have just read. This question will be taken up more fully in discussing the Phœnicians.

It is of importance at this point to remember that the exclusively Nilotic origin of Egyptian writing is easily demonstrable. In view of this fact it is quite inexplicable that there should have been a wide-spread impression that it was of Asiatic origin. In the first place our oldest examples of Egyptian writing are older than the earliest known writing of Asia. Furthermore Egyptian writing is a veritable zoological and botanical garden of fauna and flora unmistakably Nilotic, while it includes also an extensive museum of implements, ap-

pliances, weapons, clothing, adornments, buildings, etc., peculiar to the Nile valley. Only lack of acquaintance with the material background of Egyptian life, and a failure to study carefully the content of the Egyptian sign lists, can account for the totally groundless assertion of the Asiatic origin of Egyptian writing by Hommel and de Morgan, which has unfortunately found its way into many current books. As his writing developed, the Egyptian at the same time devised the earliest known paper, which he succeeded in making from the papyrus reed

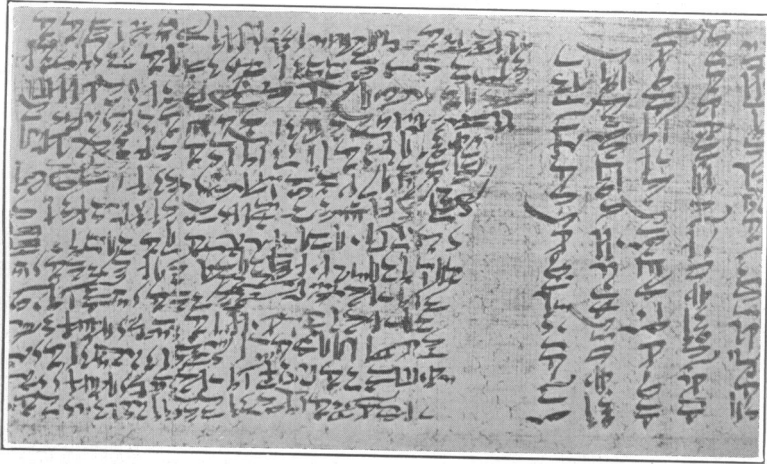


FIG. 42. SPECIMEN OF EGYPTIAN PAPYRUS PAPER, CONTAINING PART OF A TALE WRITTEN NEARLY 2000 B.C. Now in the Berlin Museum.

(*Cyperus papyrus*), a plant which grew very plentifully in the Nile marshes (Fig. 42). It has especial interest for us, because it was the first paper used by Europe, and as we shall see, this paper brought to Europe an alphabet which had grown up out of the system of Egyptian hieroglyphic of which we have just been speaking.

Thus emerged the first great organization of men, efficient in the possession of a system of written records and communication, and stably founded on a basis of agriculture and cattle breeding, prepared to exploit to the full the possession of metal tools. It was now that the kingship proved invaluable in furnishing the powerful organization for mining on a large scale which private initiative could not have furnished. The source of copper was in the Peninsula of Sinai.

Berthelot has remarked<sup>20</sup> how interesting it is, that probably at the beginning of the exploitation of these mines of

<sup>20</sup> "Sur les mines de cuivre du Sinai," *Comptes rendus de l'Académie des Sciences*, 19 Aug., 1896.

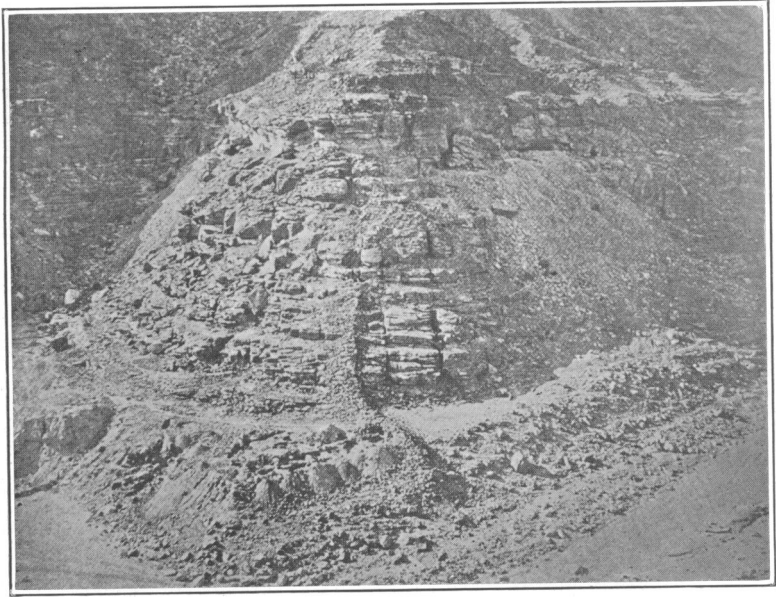


FIG. 44. ONE OF THE EARLY COPPER MINES IN SINAI WORKED BY THE ANCIENT EGYPTIANS. (Photograph by Petrie.)

Sinai, that is over six thousand years ago, by an empiricism the origin of which is easy to conceive, man had already gained the processes for smelting metal, which have been followed ever since even down into our own day. Only recently have the metallurgical chemists succeeded in devising processes more successful and efficient than those which were first devised in Sinai over six thousand years ago.

This remark of Berthelot's justifies us in picturing the experience of some wandering Egyptian back in the fifth millennium B.C. as he banked his fire with pieces of copper ore which happened to be lying about his camp—part of the talus and detritus which encumbers the base of the cliffs in the lonely valleys of Sinai. As these natural fragments were exposed to the fire, the charcoal of the wood blaze, together with the heat, reduced a portion of the ore, and we can easily imagine how the attention of the wanderer would be attracted by a glittering globule of the liberated metal as it rolled out among the ashes.

The new age of mankind born on that memorable day was beginning to enter on its birthright, when centuries later the Egyptian monarchy emerged in the middle of the fourth millennium B.C. The metal, which the first Egyptian who possessed it had gained by accident, was now to be won systematically and on a relatively large scale, as only the sovereign could do in that distant age, when individual initiative was unequal to

the task. In Fig. 44 we see one of the ancient Egyptian mines in Sinai visible high up on the right. Though this particular example is not one of the earliest, these mines of Sinaitic Maghara are the oldest known mines in the world. Below the mine on a slight elevation at the foot of the slope we see the stone huts of the miners. A protective wall extends transversely across the valley. Here lived a little colony of miners. Plentiful evidences of their work are still scattered about the place. Under the floor of the hut they concealed the pottery canteen with which they carried on their rough-and-ready housekeeping, and there Petrie found it in his investigation of the place (Fig. 45). Their copper tools have likewise been found covered by rubbish (Fig. 46). The heavy stone picks which they still employed in getting out the ore, have likewise been found on the spot (Fig. 47).

The interiors of the mines themselves are very instructive. The action of the copper tools on the wall of the drift can still be closely followed and exhaustively examined, even to deter-

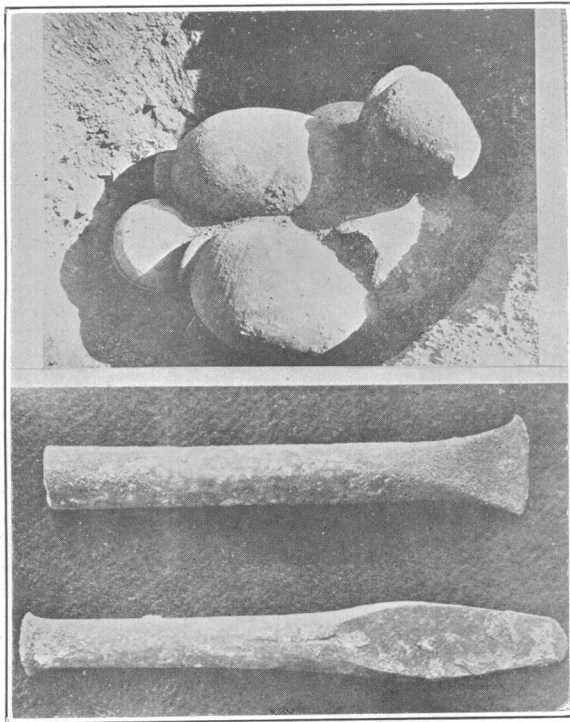


FIG. 45. POTTERY CANTEEN OF ANCIENT EGYPTIAN MINERS. Found buried under the floor of their hut in Sinai. (Maghara; photograph by Petrie.)

FIG. 46. COPPER CHISELS EMPLOYED BY ANCIENT EGYPTIAN MINERS IN SINAI. (Serabit; photograph by Petrie.)

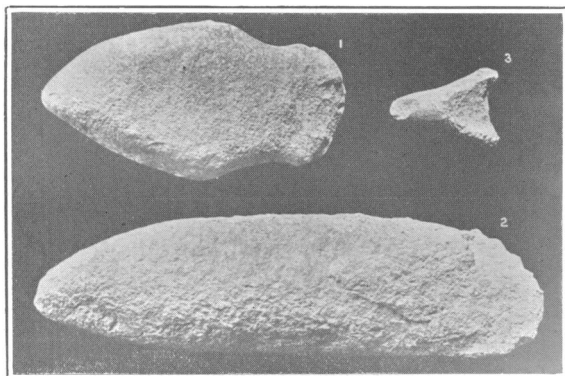


FIG. 47. HEAVY STONE PICKS AND STONE DRILL-HEAD FOUND AT ANCIENT EGYPTIAN COPPER MINES IN SINAI. (Photograph by Petrie.)

mining the width of the chisel edge (Fig. 48). Though the mines are not usually large, and do not commonly exceed five feet in height, Fig. 49 shows a chamber of spacious dimensions. Space does not permit discussing the methods of freeing and taking out the ore; but we may glance at the evidences which disclose the smelting process. It is clear that smelting was often done directly at the mine. Petrie found the heavy stone pounders by means of which the ore was crushed (Fig. 50). Masses of slag have also been uncovered, and in Fig. 51 we see

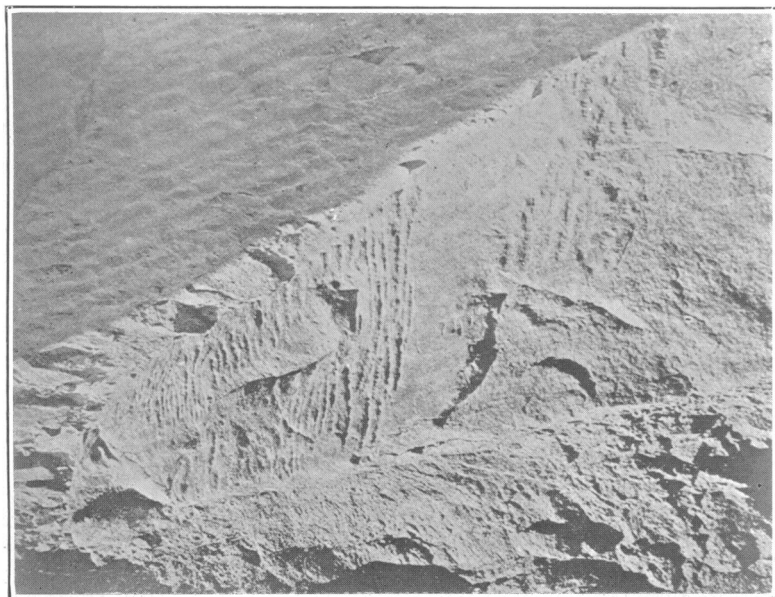


FIG. 48. WALL SHOWING STROKES OF COPPER CHISEL IN ANCIENT EGYPTIAN COPPER MINE IN SINAI. (Maghara; photograph by Petrie.)

a pottery crucible with large nozzle for pouring the molten metal into forms.<sup>21</sup>

The copper-bearing minerals which these earliest miners smelted were chiefly of three kinds: turquoise, containing only about three and a third per cent. of oxide of copper; a hydrosilicate of copper; and finally certain granites impregnated with carbonate and hydrosilicate of copper. These granites are also poor ore, but the hydrosilicate is sometimes very rich in copper.<sup>22</sup>

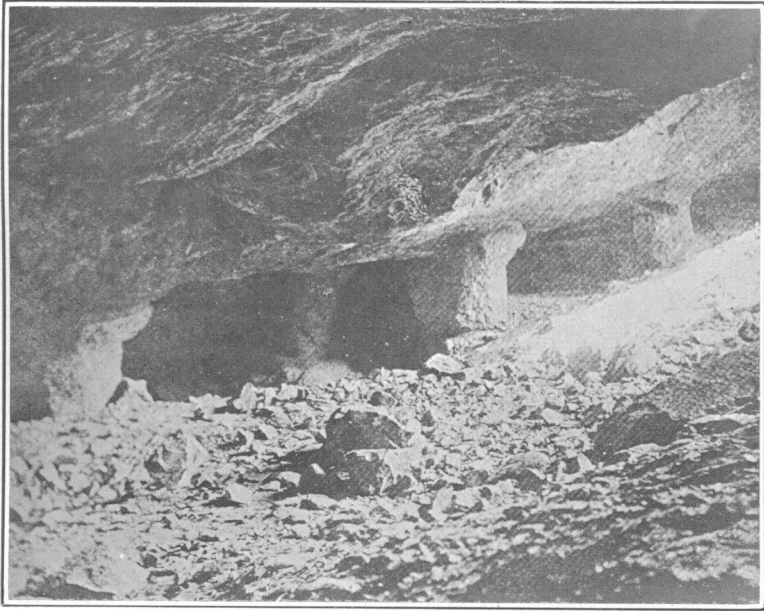


FIG. 49. INTERIOR OF A LARGE COPPER MINE WORKED BY THE ANCIENT EGYPTIANS IN SINAI. (Serabit; photograph by Petrie.)

The decisive importance of these mines in Sinai is evident when we understand that they are definitely dated. For over two thousand years the Pharaohs exploited the Sinai copper regions and have left their records on the rocks around the mines to testify to the fact. These records begin in the thirty-fourth century and continue until the latter part of the twelfth century B.C. It is not a little impressive at the present day to see appearing on the rocks before us the figure of the first ruler of men who has put himself on record as having organized and sent forth his people to bring out of the earth the metallic re-

<sup>21</sup> The above discussion of the ancient mines of Sinai is much indebted to the text and photographs of Petrie, "Sinai."

<sup>22</sup> See Berthelot, *ibid.*



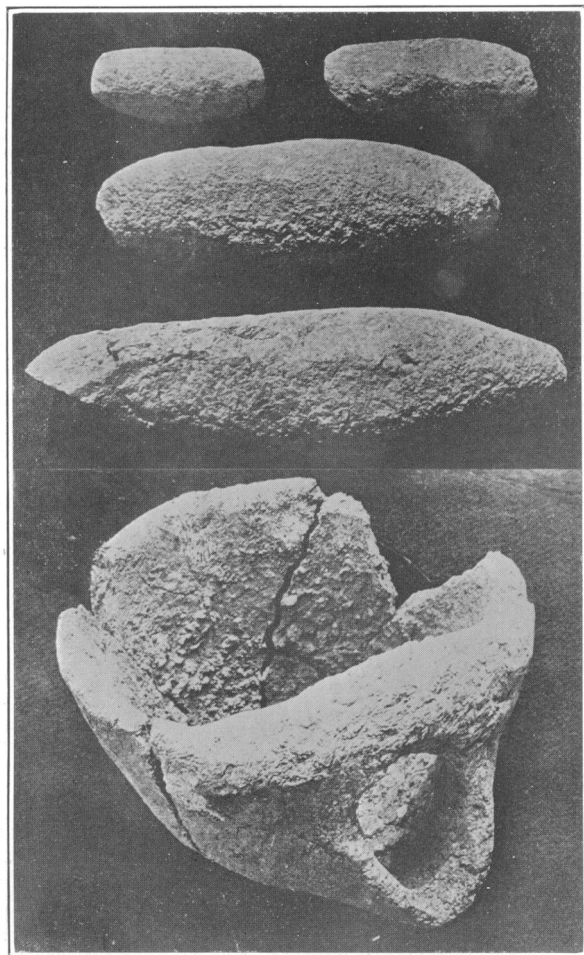


FIG. 50. STONE POUNDERS FOR CRUSHING COPPER ORE USED BY THE ANCIENT EGYPTIANS IN SINAI. (Photograph by Petrie.)

FIG. 51. POTTERY CRUCIBLE WITH NOZZLE FOR POURING MOLTEN COPPER INTO FORMS. Found at the ancient copper mines in Sinai. (Serabit; photograph by Petrie.)

sources without which man could no longer carry on a great state (Fig. 52).

As we approach we are standing in the presence of the earliest known historical monument. Carved with rugged and archaic simplicity, the figure of this earliest royal miner rises before us in heroic proportions. Here is the earliest sovereign to follow economic dictates and to march into a neighboring continent to seize by sole right of might the mineral wealth which his people needed. Depicted in the symbolic ceremony of crushing the Bedwi chief of the district, to signify the Egyptian Pharaoh's possession of the region, this king Semerkhet

thus published to the natives of western Asia his sovereignty over the world's earliest copper mines. He wears here the official crowns, the white and the red, which signify his supremacy over the Two Egypts, a supremacy which he had thus extended over neighboring Asia in the 34th century B.C. Thus the earliest known autocracy, seizing the mineral-bearing regions of Asia which it needed, some 5,300 years ago, began that long career of aggression based on economic grounds, which continuing ever since culminated in the seizure of the mineral wealth of northern France in August, 1914.

This record of Egyptian conquest in metallurgy, let it be noted, consists of inscriptional as well as sculptured elements. The name of the king in Egyptian hieroglyphics of unmistakable Nilotic origin, accompanies his figure, and it is well to remember that this mining record, made after Egypt had known of copper for over half a millenium, is nevertheless several centuries older than the oldest dated piece of copper known in Asia.

This earliest family of sovereigns ruling over a people of several millions was founded about 3400 B.C. by Menes, the first of the Pharaohs. His home was at Thinis, near Abydos in Upper Egypt, below the great bend where the river approaches most nearly to the Red Sea. We call the whole group the First Dynasty, and together with the second group, or second Dynasty, these early dynastic kings of Egypt were



FIG. 52. RELIEF CARVED ON ROCKS AT THE ANCIENT EGYPTIAN COPPER MINES IN SINAI (MAGHARA), IN THE THIRTY-FOURTH CENTURY B.C. It shows the figure of the earliest known mining promoter, King Semer-khet of Egypt. At the left he smites a Bedwi chief of the region, while his other two portraits display him once with the crown of Upper and again with the crown of Lower Egypt. This is the oldest historical monument known, and the earliest such record of a foreign conquest on alien soil. (Photograph by Petrie.)

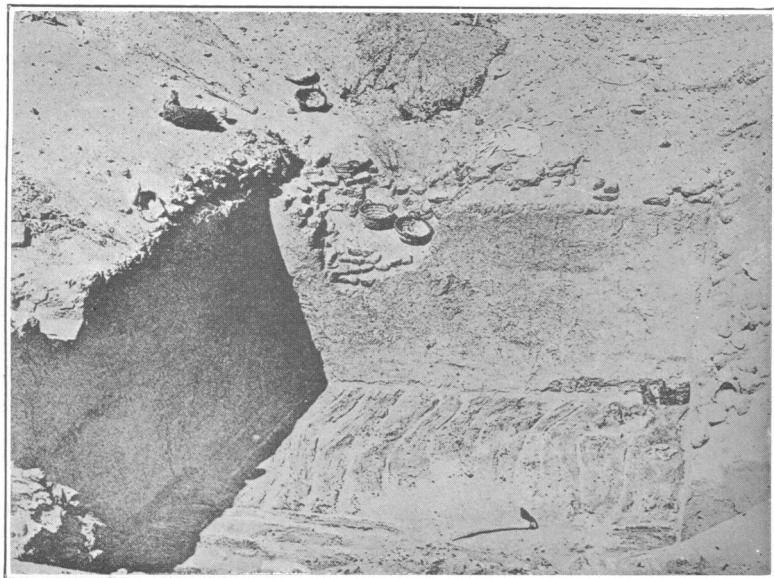


FIG. 54. BRICK-LINED TOMB CHAMBER OF ONE OF THE EARLY DYNASTIC KINGS (ABOUT 3400 TO 3000 B.C.) AT ABYDOS. (Photograph by Petrie.)

buried in the desert behind Abydos, where the wreckage of nine of their tombs still survives (Fig. 54). After Amélineau's unsuccessful and destructive attempt to excavate these

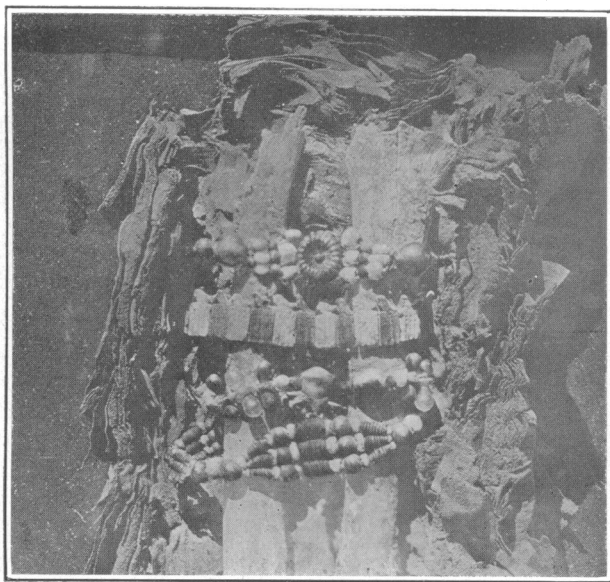


FIG. 55. FOUR BRACELETS OF GOLD AND PRECIOUS STONES, STILL ON THE ARM OF A ROYAL LADY. Found by Petrie in one of the early dynastic tombs of Abydos. (Photograph by Petrie.)

tombs, we owe the rescue of what was left, to Petrie's efforts. He was able to save enough of the palace furniture and other royal equipment placed in these tombs for the use of the royal dead in the hereafter, to disclose to us the remarkable progress of this earliest state in material life, especially in arts, industries and craftsmanship, during the last four centuries of the fourth millennium B.C., that is about 3400 to 3000 B.C.

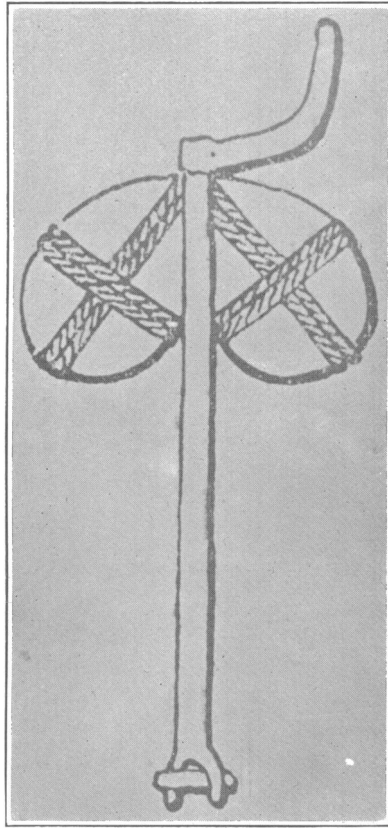


FIG. 56. EGYPTIAN CRANK DRILL INVENTED IN THE EARLY DYNASTIC PERIOD (ABOUT 3400 TO 3000 B.C.), THE EARLIEST KNOWN MACHINE. (Drawn by Borchardt from a hieroglyph.)

The advance in industrial appliances of which the jewelry in Fig. 55 gives evidence, is illustrated by a very important device for drilling out stone vessels, which was invented in the early dynastic period (Fig. 56). It is elaborately drawn for us in hieroglyphic, in which it became the sign for "craftsman." It consists of a vertical shaft with a crank attached at the top, and forked at the base to receive a cutting edge in the form of a sharp stone. Just below the crank are attached two stone

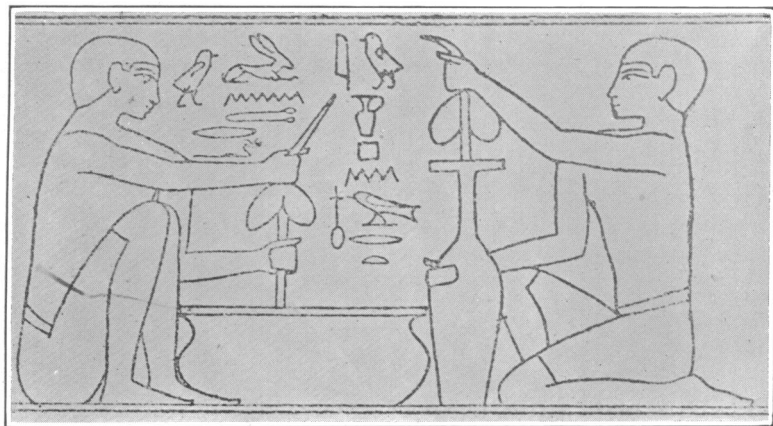


FIG. 57. EGYPTIAN CRAFTSMEN ENGAGED IN DRILLING OUT STONE VESSELS WITH THE CRANK DRILL SEEN IN FIG. 56. The scene is taken from a tomb relief. The hieroglyphs between the two workmen record their conversation. One says: "This is a very beautiful vase." The other responds: "It is indeed." (From de Morgan, "Recherches sur les origines de l'Égypte," I.)

weights, like the two balls of a steam governor. These of course serve as a fly wheel to keep the shaft revolving. Here is the earliest machine which can fairly be called such. It displays the earliest known crank or crank-driven shaft. The result was superb stone vessels and the development of a new and highly refined craft (Fig. 57).

Stimulated perhaps by his rival who was producing such beautiful stone vases, the potter at this time also made a great advance in his ancient art. For ages, since his ancestors of the lower alluvium, who already lay buried many feet below the potter's yard, he had laboriously built up his vessels by hand. But now he perfected what was perhaps at first merely a revolving bench, till it emerged as the familiar potter's wheel, the ancestor of the lathe, upon which his clay vessels were now turned.

Thus before 3000 B.C. Egyptian craftsmen devised two revolving machines, involving the essential principle of the wheel, with a *vertical* axis; but the wheel as a *burden-bearing device* with a *horizontal* axis (unless as employed in the pulley block?) did not arise in Egypt. It was first used in Asia. On the basis of these devices, and a long list of metal tools highly specialized, there arose a large group of sharply differentiated crafts, among which was the important art of glaze-making, the forerunner of the first production of glass. All these crafts were carried on by the first great body of *industrial* population known in history. They were in existence before 3000 B.C.

The great African game preserve at the southeast corner of

the Mediterranean, which once supported only detached groups of hunters wandering through the jungle, had become a huge social laboratory, where these Stone Age hunters had been transformed first into plowmen and shepherds and then into handicraftsmen. In the course of this process civilization arose and gained a stable political basis in the thousand years between 4000 and 3000 B.C.

Thus supported upon an economic foundation of agriculture, animal husbandry and manufacturing industries, arose the first great state on the Mediterranean, indeed the first great state in the world, at a time when all the rest of mankind was still living in Stone Age barbarism. Such a stable fabric of organization, under the power of the old falcon chieftain, once ruler only of Upper Egypt, but now sole head of all the Egyptian people, had shifted man from a struggle with exclusively *natural* forces, into a new arena where he must thenceforth contend with *social* forces, and out of his crucible of social struggle were to issue new values of a different order, like social justice, the value of right conduct, and hopes of happiness beyond the grave based upon worthy character—conceptions in which the Nile dwellers were as far in advance of the world about them as they were in their conquest of the material world.

This extraordinary forward movement of man before 3000 B.C. in the vicinity of the junction between the two continents, Africa and Eurasia, could not go on without important effects on the advance of man in Western Asia. It is evident that here too man had been pushing forward since Paleolithic times, and his ultimate progress in the whole region around the eastern end of the Mediterranean and down the Tigris-Euphrates valley was to have a profound influence on the career of man in the Mediterranean and thus upon the course of general human history.

The chronological relations of the cultures on the Nile and the Euphrates have not yet been definitely determined. Just as in the case of Egypt, so with regard to Babylonia, the excessively remote dates once current have been shown to be untenable. They have been given wide currency by de Morgan and others. De Morgan bases his conclusions upon two bodies of evidence. First the chronology once drawn from the written documents; and second his own excavations at Susa, the leading town in the old Elamite country on the east of Babylonia. Dr. King of the British Museum long ago discovered evidence which showed that the chronology drawn from the written documents which dated King Sargon of Akkad in the thirty-eighth century B.C. was impossible. De Morgan's distinguished

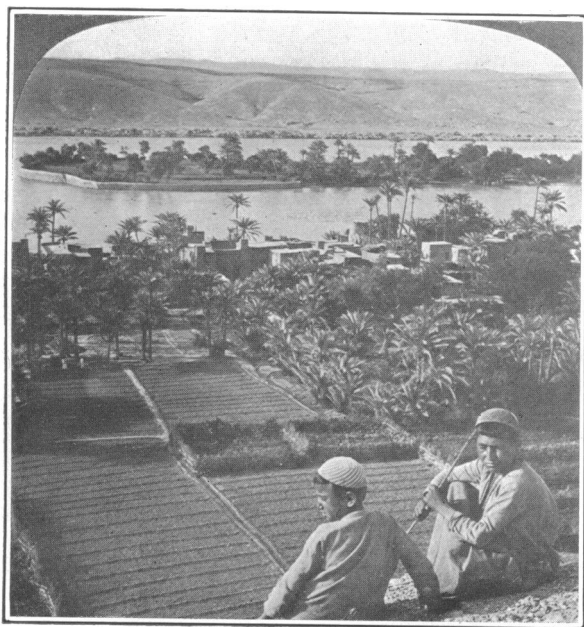


FIG. 60. THE RIVER TERRACES OF THE EUPHRATES, LOOKING EASTWARD ACROSS THE RIVER. About two hundred and fifty miles northwest of Babylon. (Copyright by Underwood & Underwood.)

countryman, Thureau-Dangin, has only in the last few months published a conclusive reconstruction, leaving nothing to be desired in its finality—a reconstruction which places Sargon well this side of 2800 and our earliest written documents of Babylonia hardly earlier than the thirty-first century B.C.

As to de Morgan's earliest periods at Susa, he dates them by their relative depth, that is by the amount of accumulated rubbish over them. Such rubbish produced by the detrition or violent destruction of sun-dried brick buildings, will of course accumulate at a rate variable from site to site and country to country, depending on a wide range of height of the buildings, widely differing thickness of the walls, the varying rapidity of detrition caused by the differing amount of rainfall and the uncertain number of the successive violent destructions. Following de Morgan, R. Pumpelly has made similar calculations for the age of the lower strata in his excavations of the ancient city of Anau in Turkestan. Among other data as a basis, he took the very slow accumulation of such rubbish in Egypt, without taking into consideration the difference in rainfall (Egypt having practically none), the difference in height of buildings and thickness of walls, and the politically sheltered situation of Upper Egyptian cities which exposed them to less

frequent destruction than the cities of Asia.<sup>23</sup> Such calculations have no value.

The development of civilized man on the lower Euphrates had undoubtedly been going on for ages before the date of his earliest surviving written documents (thirty-first century B.C.), but the age of that development has yet to be established; for unfortunately the prehistoric stages of Babylonian culture have not yet been recovered.

The river terraces of the Euphrates, such as we see in Fig. 60 overlooking a beautiful island, have not been investigated geologically, paleontologically or archeologically at all. It is evident that man dwelt between the Euphrates and the Mediterranean in Paleolithic times. His remains and his stone implements may therefore lie under and along these Euphrates terraces as they do along the Nile. They have indeed been found in Palestine and along the Phœnician coast, in caves, so stratified as to leave no doubt of their Paleolithic origin. From these early stages until the earliest written documents on the Babylonian alluvium (about thirty-first century B.C.), we have no evidence for the course of the development in western Asia.

It is, however, already perfectly clear that while the Nile valley made the earlier advance, and was the earliest home of civilization, there was reciprocal influence between the two early cultures on the Nile and the Euphrates. Thus the mace

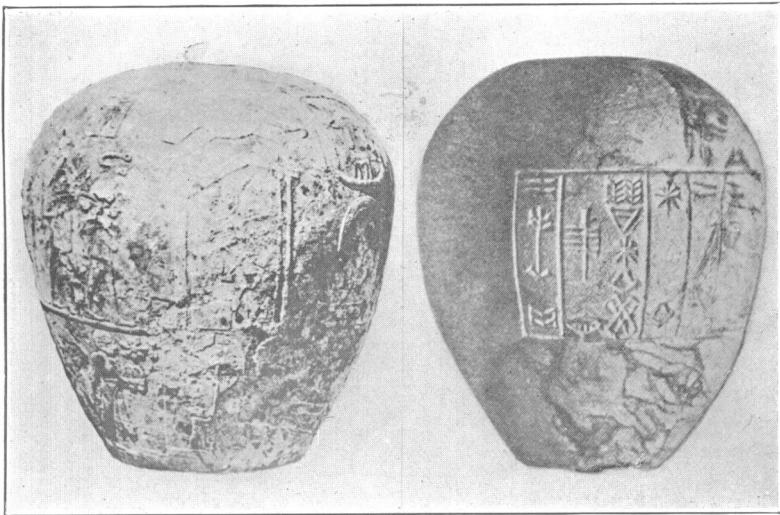


FIG. 61. EGYPTIAN AND BABYLONIAN MACE-HEADS OF THE SAME FORM.

<sup>23</sup> It may be added that Dr. Hubert Schmidt, the able archeologist attached to the Anau excavations, dated the oldest remains found there at about 2000 B.C.





FIG. 62. EGYPTIAN AND BABYLONIAN CYLINDER SEALS OF THE SAME FORM.

head which we find in Egypt far back in the fourth millennium B.C. is also found along the Euphrates many centuries later (Fig. 61). Similarly the cylinder seal employed for sealing clay is found on the Nile centuries earlier than our earliest Babylonian example of it (Fig. 62). The decorative arrangement of balanced animal figures (Fig. 63), especially with a human figure in the middle, is found on the Nile well back

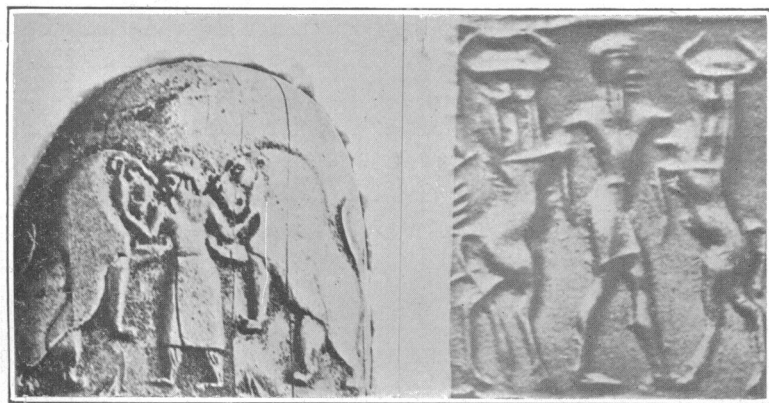


FIG. 63. EGYPTIAN AND BABYLONIAN DECORATIVE DESIGNS. Made up of animal figures balanced antithetically on either side of a human figure.

toward 4000 B.C., and our earliest examples in Babylonia cannot be dated earlier than the thirty-second century B.C. In such matters it should be remembered, however, that an inferior civilization often makes contributions to a superior culture. We have only to remember the source of tobacco, maize, potatoes and the like to illustrate this fact. There will, therefore, have been mutual exchange between the Nile and the Euphrates at a very remote date, and some of these parallels here exhibited may be examples of such mutual interchange.

This process created a great Egypto-Babylonian culture nucleus on both sides of the inter-continental bridge connecting Africa and Eurasia. It brought forth the earliest civilization in the thousand years between 4000 and 3000 B.C., while all the rest of the world continued in Stone Age barbarism or savagery. Then after 3000 B.C. began the diffusion of civilization from the Egypto-Babylonian culture center. The best illustration of what then took place is furnished by our own New World. In only two places on the globe have men advanced unaided from Stone Age barbarism to the possession of agriculture, metal and writing. One of these centers is that which we have been studying here in the Old World; the other is here in the New World.<sup>24</sup> Just as the Egypto-Babylonian culture center grew up at the junction between the two continents, Africa and Eurasia, as the oldest and the original center of civilization in the Old World, so here in the New World the oldest and original center of civilization likewise developed along and on each side of the inter-continental bridge. The far-reaching labors of a great group of Americanists have shown clearly that from this culture center in the inter-continental region of the Western Hemisphere a process of diffusion of civilization went on northward and southward into the two continents of the New World, and that process was still going on when the period of discovery and colonization began. That which we accept as a matter of course as we study the New World center, was obviously going on for thousands of years around the Old World center, although a provincially minded classicism has blinded the world to the facts. It remains for us in the next lecture, therefore, to follow the lines of culture diffusion, diverging from the Egypto-Babylonian group and stimulating Europe and inner Asia to rise from Stone Age barbarism to civilization.

<sup>24</sup> See the present writer's article, "The Place of the Near Orient in the Career of Man, and the Task of the American Orientalist" (presidential address before the American Oriental Society, in *Journ. of the Am. Or. Soc.*, June, 1919).